

Zakho Technical Institute (ZTI)



Partners

1. Det Norske Oljeselskap (DNO)
2. Gulf Keystone
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7. Koya University
8. Koya Technical Institute (KTI)



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PETROLEUM DEPARTMENT

SOLUTIONS FOR
REFINERY AND PETROLEUM
PRODUCT ANALYSIS
IN KURDISTAN REGION



ZAKHO TECHNICAL INSTITUTE
DUHOK POLYTECHNIC UNIVERSITY



Zakho Technical Institute (ZTI)

At Duhok Polytechnic University (DPU) the Zakho Technical Institute (ZTI) was established in 2002 with 2 departments only (Banking Management and Computer Systems) and gradually expanded to include the following departments: Nursing, Medical Laboratory Technology, Refrigeration and Air-Conditioning, Accounting, Statistics, Petroleum, Surveying and Electrical Power. Along the past decade, the ZTI has prepared around 4000 technical professionals in these various fields who contributed to fulfill market needs.

The Petroleum Department (PD) has been established in 2009 with a goal of becoming a leading teaching and research institution in this field in Kurdistan region. PD currently is in a process of hiring experts from abroad to help in curriculum development and research direction. The PD's sponsor and affiliate is Det Norske Oljeselskap (DNO), which is contributing to modernize instructional laboratories. The Department has an Advisory Office to work closely with oil companies in the region.

Department Goal

Equip Diploma students with knowledge and technical skills that prepare them for employment by oil industries in Kurdistan Region to meet the needs of local market.

Department activities

1. Cooperate with Foreign Oil Companies, currently existed in Kurdistan Region, for the following purposes:

a. Everyday test of samples provided by producers, processors, shippers, refiners and marketers.

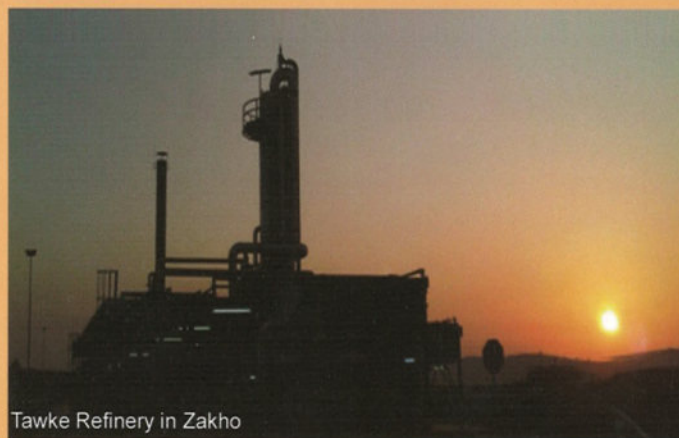
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- b. Annual or quarterly workshops for developing the skills of departmental staff.
- c. Summer training of year 2 students.
- d. Weekly and/or monthly excursion of students.

2. Encourage applied joint research with oil experts to solve related technical problems.
3. Exchange experience and information with related vocational schools in and out Kurdistan region.

Petroleum Analysis Laboratory

The Petroleum Department (PD) at Zakho Technical Institute (ZTI), Duhok Polytechnic University (DPU) provides reliable and comprehensive **Petroleum Testing Services** to support and improve the operations of oil and gas industry in Kurdistan Region. The purpose of this analysis is to identify the purity of petroleum crude oil in the oil field, quality monitoring, assay and simulated distillation. Moreover, our system treats client contracts with confidentiality and firm **when and where it is needed**. The Lab can supply sampling bottles and containers or request.



Tawke Refinery in Zakho

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List of Tests

| Test Name / Description: | Method | Price (\$) | Min. Sample Vol.: |
|--|--------------------|---------------|------------------------|
| BS&W | ASTM D1796 | 30 | 100 ml |
| Cloud Point | ASTM D2500 | 50 | 50 ml |
| Copper Strip Corrosion | ASTM D130 | 40 | 30 ml |
| Density/ Specific Gravity/ API Gravity | ASTM D4052 & D5002 | 35 | 500ml/test Temp. |
| Cetane # | ASTM D6890 | 225 | 100 ml |
| Flashpoint, Cleveland Open Cup | ASTM D92 | 50 | 200 ml |
| Flashpoint, Pensky, Marten, Closed Cup | ASTM D93 | 45 | 200 ml |
| Conradson Carbon Residue - CCR | ASTM D189 | 50 | 100 ml |
| Natural Gas Analyses, Hydrocarbons to H ₂ , N ₂ , Co by GC | IN-HOUSE | 150 | gas sample Container |
| Physical Distillation | ASTM D86 | 200 | 500 ml |
| Pour Point | ASTM D 97 | 100 | 100 ml |
| Reid Vapour Pressure | ASTM D323 | 120 | 1L (Special Container) |
| Soxhlet Extraction | IN-HOUSE | 145 | 250 gr |
| Sulfur Content RX (Liquid Only) | ASTM D7039 | 40 | 25 ml |
| Saybolt Viscosity - Universal & Furol Method | ASTM D88 | 50/test Temp. | 150 ml/Test Temp. |
| Smoke point | ASTM D1322 | 50 | 50 ml |
| Salt content | ASTM D3230 | 100 | 150 ml |
| Viscosity Kinematic (Per Temperature) | ASTM D445 | 50/test Temp. | 50 ml/Test Temp. |
| Water Content (Karl Fischer) | ASTM D6304 | 40 | 25 ml |
| PH (Water) | IN-HOUSE | 10 | 50 ml |
| Penetration (Automatic) | ASTM D5 -250 | 70 | 250 gr |
| Ring and Ball | ASTM D36 | 70 | 100 gr |
| Aniline Point (U-Tube Method) | ASTM D611 | 120 | 150 ml |
| Ductility | ASTM D113 | 200 | 400 gr |
| Octane # | ASTM D2699-86 | 150 | 100 ml |

